

Distributed Computer Systems in Industry

The Theme: Nowadays, computer systems are present in almost all types of human activity and they support any kind of industry as well. Most of these systems are distributed where the communication between nodes is based on computer networks of any kind. Passing data between system components is the key issue when designing distributed systems, especially systems of industrial informatics. From field bus technologies through industrial Ethernet and wireless solutions to multiservice and convergent systems, there are many aspects of computer networks uses and many interesting research domains. The industrial area requires a wide range of various communication technologies, particularly time-constrained ones. Loads of them are quite sophisticated or even unique. Moreover, industrial processes often need integration on different levels. This leads to the necessity of resolving many issues both in hardware and software areas. The main objective of this Special Section is to bring the ideas of the worldwide research community into a common platform, to present the latest advances and developments in design, modeling, programming, simulation, management, and practical implementation of distributed systems based on computer networks, also including latest works related to molecular and quantum technology to be used in the future. Topics of interest of this Special Section include, but are not limited to:

Fundamentals of distributed computer systems architecture and programming.

New technologies related to networked control systems Modeling of distributed systems

Internet networks in industrial environment

Cloud computing in industrial environment

Data security in distributed communication and processing

Industrial computer networks

Integration issues and component approach

Wireless systems and sensor networks

Evaluation and QoS of multiservice networks

Ambient, convergent networks and multi-networking issues

Applications of distributed systems